WHAT IS CLAIMED IS:

1. A method for coating the inside of a gun barrel, whose inside surface is to be provided, at least in a partial region, with a layer of a high melting temperature coating or layer material for reducing erosion of the gun barrel,, said method comprising:

providing a plasma jet spray device and moving the device along the interior of the gun barrel;

applying the layer material to an inside surface of a gun barrel through use of the plasma jet spraying device;

simultaneously with the plasma spraying, directing a laser beam toward the inside surface of the barrel to produce a molten bath containing melted gun-barrel material and the layer material in a near-surface region of the barrel that is being coated; and,

thereafter permitting the bath to harden.

2. The method according to claim 1, wherein the step of directing includes directing the laser beam toward the inside surface of the gun barrel at a focal point of the plasma jet.

3. The method according to claim 1, wherein the step of directing includes directing the laser beam toward the inside surface of the gun barrel directly in front of the plasma jet in the direction of movement.

4. The method according to claim 1, wherein the moving takes place at least in an axial direction of the gun barrel.

5. The method according to claim 1, wherein the moving of the plasma jet and of the laser beam follows a helical path relative to the gun barrel.

6. The method according to claim 1, wherein the depth of heat of the inside surface of the gun barrel is equal to or less than 5 mm.

7. The method according to claim 1, wherein the depth of heat of the inside surface of the gun barrel is equal to or less than 1mm.

8. The method according to claim 1, wherein hardening is carried due to movement of the laser away from a region of the molten bath.

9. The method according to claim 8, wherein the movement of the laser beam is continuous.